

**GEOL 250 Field Methods in Earth  
and Environmental Science  
Fall 2003**

Instructors: Flarsheim 420  
Prof. Raymond M. Coveney, Jr.  
Caroline P. Davies, PhD.

Email:  
[coveneyr@umkc.edu](mailto:coveneyr@umkc.edu)  
[daviesc@umkc.edu](mailto:daviesc@umkc.edu)

Office Hours:  
Tues/Thurs 9:00 am –1:30 pm  
Mon 2:30-4:30

Welcome to Field Methods 250, in this course we will explore the techniques of field observation and data collection used to understand and assess Earth's environmental systems. You will learn the methods and operation of a variety of field practices and instrumentation. Whether you plan to continue to do field work in the future or not, it is essential in Environmental and Geosciences to understand the concepts, methods, and best practices behind data collection, and be aware of the most current instrumentation available.

**Course Goals:**

- Expose students to landscape observations and primary data collection techniques for addressing questions about the environment.
- To log data and keep a field journal.
- Provide students experience operating a variety of field instrumentation and methods.
- Introduce students to the great fun of working directly with the environment.

**Course Format:**

This is exclusively a field course and comes with all the risks of outdoor work. So, be prepared to go into the field every class (rain or shine). We will conduct our field work on campus or drive in the Departmental van to field locations within and around the Kansas City area. Since we meet only once a week, attendance is required and essential.

The instructors will assist you as you learn each method. Students will enter field notes each class. Field notes will be handed in Monday morning for review and grading, and returned the following class period. Each section of the course will be concluded by completing an inquiry-based problem set based on skills and information learned. Questions will be answered from information collected in the field and written up as a report. The course final will consist of a Final Field Challenge to be conducted independently by the students with the instructors.

**Course Evaluation:**

Student evaluations are based on their active participation in weekly field trips, learning the operation of instrumentation, handling of data, and development of field observation skills. Problem sets will be assigned for each of the field topics.

<u>Activity</u>	<u>Contribution to grade</u>
Field note book	30%
Problem Sets (3)	30%
<u>Field Final</u>	<u>40%</u>
Total	100%

Students with special requirements should discuss them with the instructors at the beginning of the course and we will do our best to accommodate your needs.

Course (subject to revision)

<b>Date</b>	<b>Topic</b>	<b>Method</b>	<b>Assignment</b>
Week 1 Aug 29	Course Introduction Landscape Observation	Safety, Field Etiquette Pace and eye height	notebook
Week 2 Sept 05	<b>Basic Profile Mapping</b> Brookside Street Profile	Pace and Compass	notebook
Week 3 Sept 12	Swope Park Glade Slope Profile	Pace & Hand Level	notebook
Week 4 Sept 19	Swope Park Glade Profile, Vegetation, & Soil	Set Hobo loggers	Profile Problem Set
Week 5 Sept 26	<b>Topographic Mapping</b> Brush Creek	Tape and stadia	notebook
Week 6 Oct 03	Channel Transect Brush Creek	Tape and stadia	notebook
Week 7 Oct 10	Topographic mapping Brush Creek	Total Station	Topographic Map Problem Set
Week 8 Oct 17	<b>Geologic Mapping</b> Geologic Sections- 87 <sup>th</sup> Street	Stratigraphic mapping	map & notebook
Week 9 Oct 24	Drawing a Geologic Section 95 <sup>th</sup> Street	Stratigraphic mapping	map & notebook
Week 10 Oct 31	Drawing a Geologic Section Holiday Road Section	Stratigraphic mapping	map
Week 11 Nov 07	Drawing a Geologic Section 63 <sup>rd</sup> Street	Laser Level	Geologic Map Problem Set
Week 12 Nov 14	<b>Stream Channel Gradient</b> Swope Park Microclimate	GPS & channel section	Retrieve Hobo data Climograph
Week 13 Nov 21	Global Positioning Systems GPS scavenger hunt	GPS	GPS map
Week 14 Nov 28	Thanksgiving- No class		
Week 15 Dec 05	Field Final		

### **What to bring into the field?**

Field note book/pencils/eraser/small straight edge

Water!

Sunglasses

Hat

Layered clothing

Long pants (poison ivy, thorns, rocks etc.)

Boots, no sandals

Bring food, medicine, TP- we won't be stopping at convenience stores

Brain power

Optional if you have them (don't buy them):

Rock hammer

Hand lens

Mineral , Tree, and Bird Guides

### **Field Safety and Etiquette**

Never work alone!

Stay off the roads!

No rock rolling

No unnecessary climbing

Whenever appropriate share data, we will let you know

Never report other person's results as your own

Respect public & private property, get permission before working